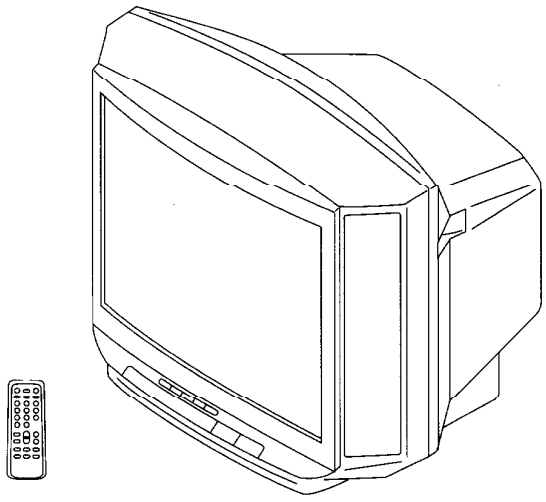
SERVICE MANUAL

BG-2S CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-J21MF2	RM-869	E	SCC-U03H-A
KV-J21MH2	RM-869	Hong Kong	SCC-U02D-A
KV-J21MN21	RM-869	GE	SCC-U05M-A

MODEL	COMMANDER	DEST.	CHASSIS NO.



MICROFILM

TRINITRON® COLOR TV

SONY®

SPECIFICATIONS

		Note
Power requirements	110-240 V AC, 50/60 Hz	
Power consumption (W)	Indicated on the rear of the TV	
Television system	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58	
Stereo system	NICAM Stereo B/G, I, A2 Stereo (German) B/G	KV-J21MH2/J21MN21 only
Teletext language	English, French, Arabic	KV-J21MN21 only
Channel coverage		
B/G	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41	
I	UHF: B21 to B68 / CATV: S01 to S03, S1 to S41	
D/K	VHF: C1 to C12, R1 to R12/UHF: C13 to C57, R21 to R60 / CATV: S01 to S03, S1 to S41, Z1 to Z39	
M	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to A-2, A to W+ 4, W+ 6 to W+ 84	
Audio output (speaker)	3W + 3W	
Inputs	(antenna): 75 ohms external terminal	
	(video input) jacks: phono jacks (video): 1 Vp-p, 75 ohms (audio): 500 mVrms, high impedance	
Outputs	(headphone) jack: mini jack	
	(monitor output) jacks: phono jacks (video): 1 Vp-p, 75 ohms (audio): 500 mVrms	
Picture tube	21 in.	
Tube size (cm)	54	Measured diagonally
Screen size (cm)	51	Measured diagonally
Dimensions (w/h/d, mm)	610 × 470 × 474	
Mass (kg)	22	

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

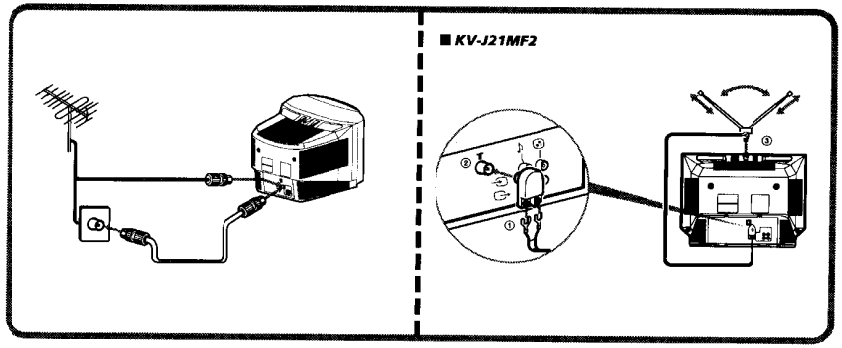
COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

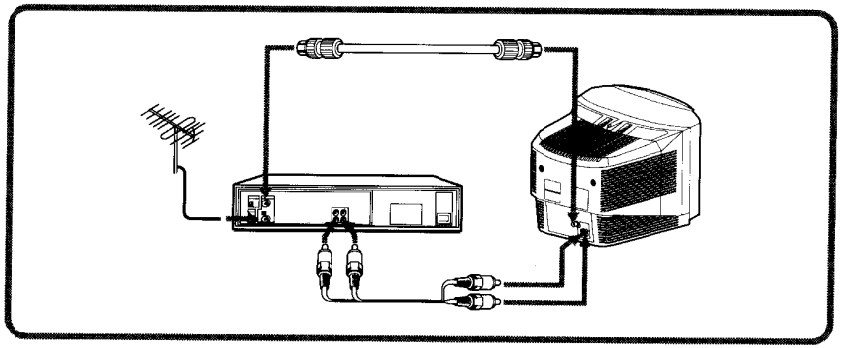
TABLE OF CONTENTS

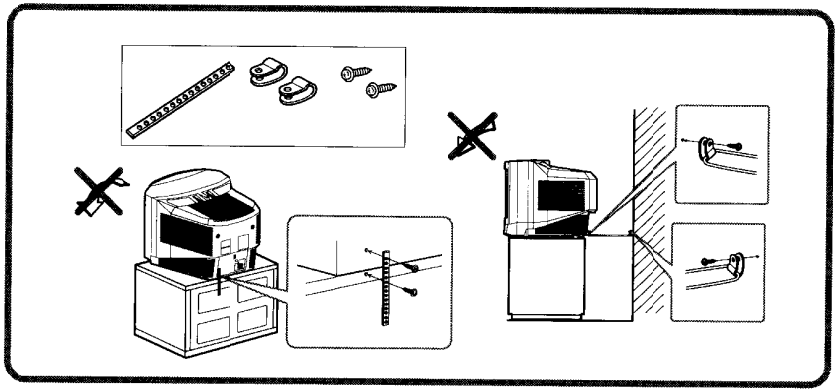
Section	Title	Page
1. GENERAL		4
2. DISASSEMBLY		
2-1.	Rear Cover Removal	10
2-2.	A Board Removal	10
2-3.	F1 Board Removal	10
2-4.	Service Position	10
2-5.	Replacement of Parts	11
2-6.	Demagnetization Coil Removal	11
2-7.	Picture Tube Removal	12
3. SET-UP ADJUSTMENTS		
3-1.	Beam Landing	13
3-2.	Convergence	14
3-3.	Focus Adjustment	15
3-4.	G2 (Screen) and White Balance Adjustments	16
4. SELF DIAGNOSIS FUNCTION		17
5. CIRCUIT ADJUSTMENTS		
5-1.	Adjustments with Commander	18
5-2.	Adjustment Method	19
5-3.	A Board Adjustment after IC003 (Memory) Replacement	24
5-4.	Picture Distortion Adjustment	24
6. DIAGRAMS		
6-1.	Block Diagram	25
6-2.	Circuit Boards Location	29
6-3.	Schematic Diagrams and Printed Wiring Boards	29
(1)	Schematic Diagram of A Board	33
(2)	Schematic Diagram of A3 Board	38
(3)	Schematic Diagrams of F1 and V1 Boards	41
(4)	Schematic Diagrams of C and VM Boards	45
6-4.	Semiconductors	49
7. EXPLODED VIEW		
7-1.	Chassis	51
8. ELECTRICAL PARTS LIST		53

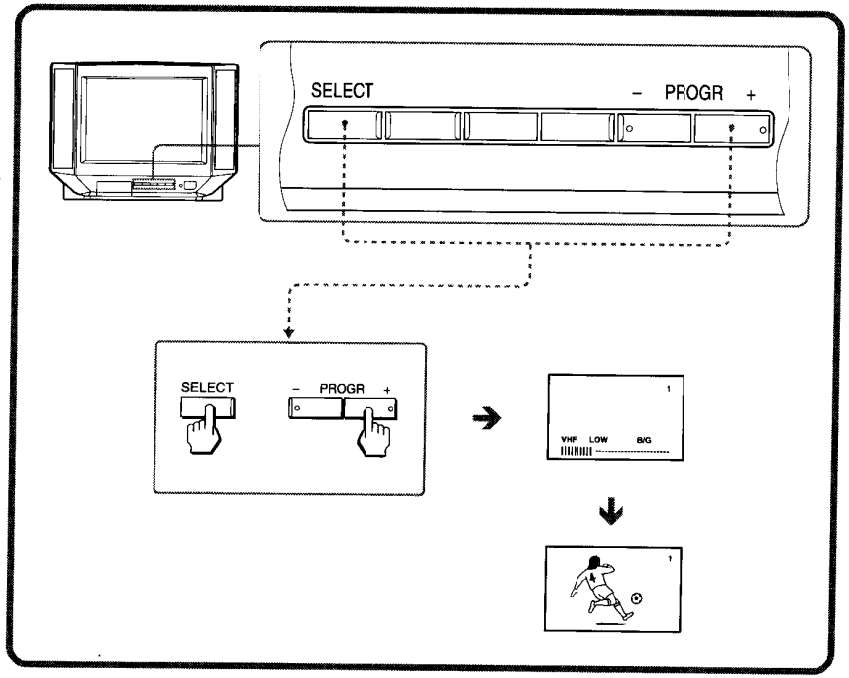
SECTION 1
GENERAL

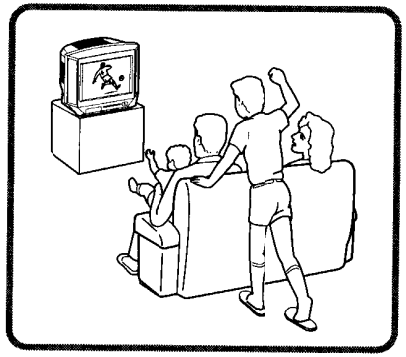
The operating instructions mentioned here are partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in this manual.

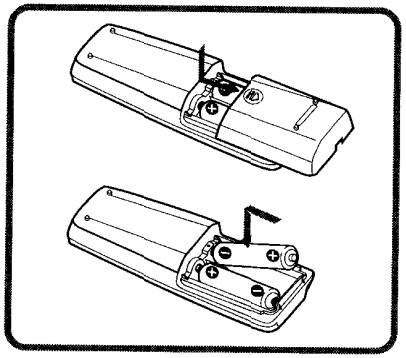








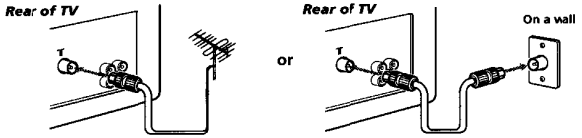




Connections

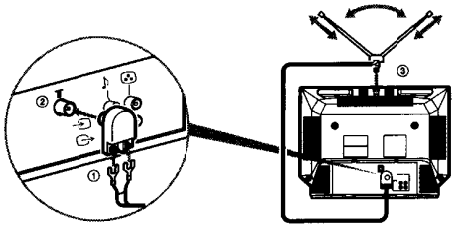
Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable. Plug the connector into the Y (antenna) socket at the rear of the TV.



Connecting an indoor antenna

■ *KV-J21MF2*



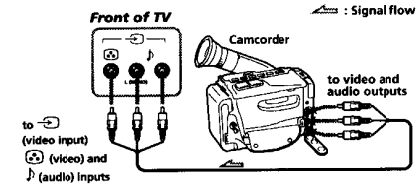
Note

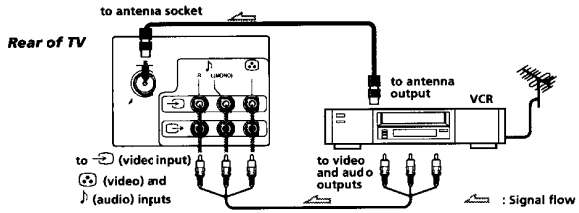
- You are advised to use an outdoor antenna for better reception.

Connecting optional equipment

You can connect optional audio/video equipment to your TV such as a VCR, multi disc player, camcorder, or video game.

Connecting video equipment using the ⇦ (video input) jack





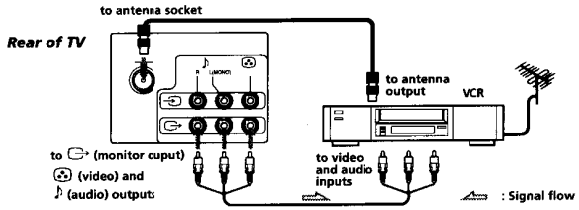
When using the ⇦ (video input) jack

Do not use the ⇦ (video input) jacks at the front and the rear of your TV simultaneously; otherwise the picture will not be displayed properly on the screen.

When connecting a monaural VCR

Connect the yellow plug to (video) and the black plug to (audio) – L (MONO).

Connecting audio/video equipment using the ⇨ (monitor output) jack



When recording through the ⇨ (monitor output) jack

Do not change the channel or video input while recording with a VCR; otherwise the channel or video input you are recording also will be changed.

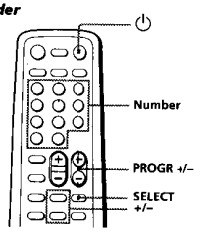
KV-J21MF2/J21MH2/J21MN21
RM-869

Presetting channels

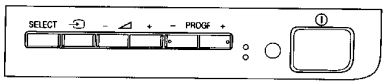
You can preset up to 100 TV channels in numerical sequence from program position 1 using the buttons on the remote commander or the TV.

You can preset TV channels quickly, automatically or manually.

Remote commander



Front of TV

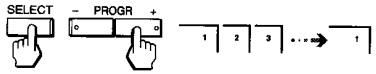


Quick channel presetting

1 Press ⏻ to turn on the TV.

When the TV is turned on in standby mode, press ⏻ on the remote commander.

2 Press SELECT and PROGR + on the TV simultaneously for one to two seconds.



If the picture color is poor and/or the sound is noisy

Select the appropriate TV system as follows:

1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears.

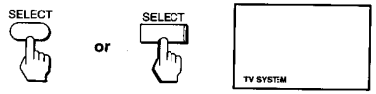
2 Press +/– on the remote commander or ◿ +/– on the TV until the picture and sound becomes normal.

Notes

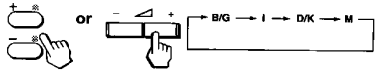
- If you do not know your local TV system, consult your nearest authorized service center or dealer.
- The setting of the "TV SYSTEM" is memorized for each program position.

Presetting channels automatically

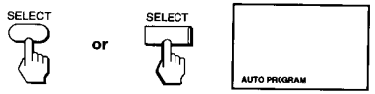
1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears on the screen.



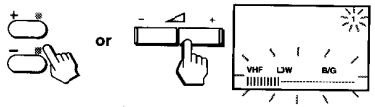
2 Press +/– on the remote commander or ◿ +/– on the TV to select the TV system.



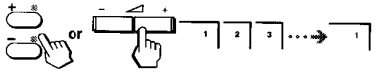
3 Press SELECT on the remote commander or the TV until "AUTO PROGRAM" appears on the screen.



4 Press +/– on the remote commander or ◿ +/– on the TV.

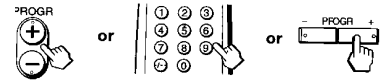


5 Press +/– on the remote commander or ◿ +/– on the TV again.



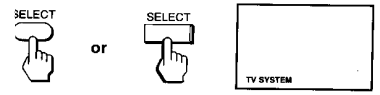
To start presetting channels automatically from a specified program position

Press PROGR +/– or number buttons on the remote commander or PROGR +/– on the TV until the required program position appears on the screen after step 4 of "Presetting channels automatically".

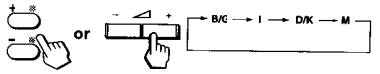


Presetting channels manually

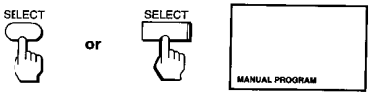
1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears on the screen.



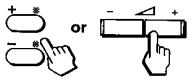
2 Press +/– on the remote commander or ◿ +/– on the TV to select the TV system.



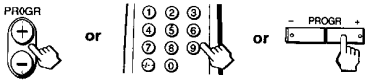
3 Press SELECT on the remote commander or the TV until "MANUAL PROGRAM" appears on the screen.



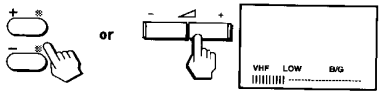
4 Press +/– on the remote commander or ◿ +/– on the TV.



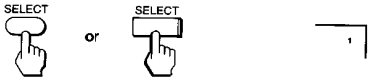
5 Press PROGR +/– or number buttons on the remote commander or PROGR +/– on the TV until the required program position appears on the screen.



6 Press +/– on the remote commander or ◿ +/– on the TV until the required channel picture appears on the screen.



7 Press SELECT on the remote commander or the TV.



Disabling program positions

1 Press PROGR +/– or number buttons on the remote commander or PROGR +/– on the TV until the unused or unwanted program position appears on the screen.

2 Press SELECT on the remote commander or the TV until "MANUAL PROGRAM" appears on the screen.

3 Press +/– on the remote commander or ◿ +/– on the TV.

4 Press PIC MODE on the remote commander.

5 Press SELECT on the remote commander or the TV.

To preset the disabled program position again

Preset the channel quickly, automatically or manually.

Watching the TV

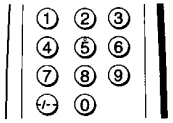
1 Press ⏻ to turn on the TV.

When the TV is turned on in standby mode, press ⏻ on the remote commander.

2 Select the TV program you want to watch.

To select a program position directly

Press the number button.



To select a two-digit program position, press "-/--" before the number buttons.

For example: to select program position 25, press "-/--," and then "2" and "5."

To scan through program positions

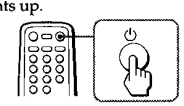
Press PROGR +/– until the program position you want appears.

3 Press ◿ +/– to adjust the volume.

Turning off the TV

To turn off the TV temporarily

Press ⏻ on the remote commander. The ⏻ indicator on the TV lights up.



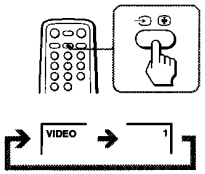
To turn off the TV completely

Press ⏻ on the TV.

If the power on the TV is turned off in standby mode, the ⏻ indicator on the TV may remain alight for a while.

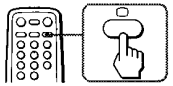
Watching the video input

Press ⮆ ⊕.



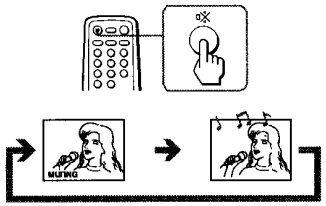
To watch TV

Press ▢.



Muting the sound

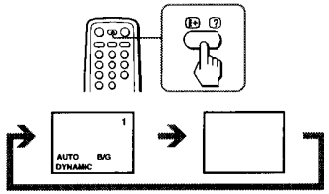
Press 🔇.



Displaying on-screen information

Press ⊕ ?.

The program position, local system, and TV settings are displayed on the screen.

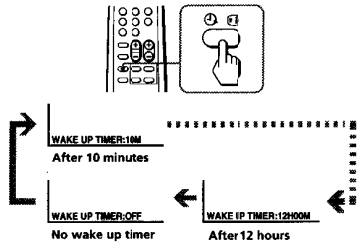


Setting the Wake Up Timer

You can set the TV automatically turned on as you program.

1 Press ◴ ⊟ repeatedly to set the timer.

The on-screen display appears and the ◴ indicator on the TV lights up.



2 If you want a particular TV program or video input to be displayed using the Wake Up Timer, select the TV program or video input.

3 Press ⏻ on the remote commander or set the Sleep Timer to turn off the TV in standby mode.

To cancel the Wake Up Timer, press ◴ ⊟ repeatedly until "WAKE UP TIMER: OFF" appears, or turn off the main power of the TV.

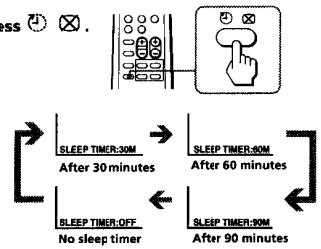
Notes

- The Wake Up Timer starts immediately after the on-screen display disappears.
- The last TV program position or video input just before the TV turns into standby mode will appear when the TV is turned on using the Wake Up Timer.
- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up Timer, the TV automatically turns into standby mode. If you want to continue watching the TV, press any button or control on the TV or remote commander.

Setting the Sleep Timer

You can set the TV automatically turned off as you program.

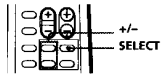
Press ◴ ⊠.



To cancel the Sleep Timer, press ◴ ⊠ repeatedly until "SLEEP TIMER: OFF" appears, or turn off the TV.

Changing the on-screen display language

You can use buttons on the remote commander or the TV to change the on-screen display language.



1 Press SELECT until the screen appears as follows:

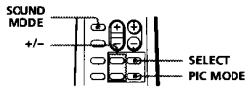
2 Press +/– to select " 中文 ".

Note

- You can also use SELECT and ◿ +/– on the TV to select the on-screen display language.

KV-J21MF2/J21MH2/J21MN21
RM-869

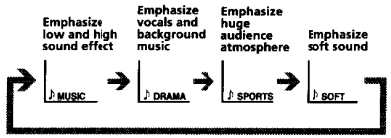
Adjusting the sound and picture



Selecting the sound mode

Press SOUND MODE until the mode you want appears.

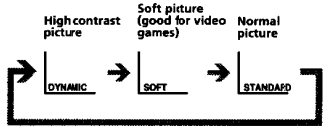
Each time you press SOUND MODE, the screen changes as follows:



Selecting the picture mode

Press PIC MODE until the mode you want appears.

Each time you press PIC MODE, the screen changes as follows:



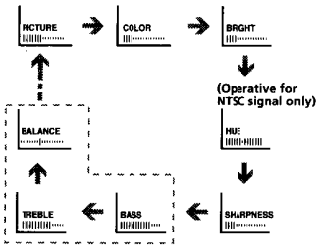
Note

- If you change the picture mode after the following adjustments, the adjustment changes in accordance with the picture mode.

Adjusting the sound and picture settings

1 Press SELECT until the item you want to adjust appears.

Each time you press SELECT, the screen changes as follows:



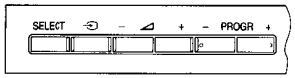
2 Press +/– to adjust the item.

3 To adjust other items, repeat steps 1 and 2.

Notes

- You can also use SELECT and ◿ +/– on the TV to adjust the sound and picture settings.

Front of TV



If the picture color is abnormal when receiving programs through the ⅂ (antenna) terminal

Change the "TV SYSTEM" or "COLOR SYSTEM" setting or adjust the "CCLOR" level in the on-screen display until the color becomes normal.

If the picture color is abnormal when receiving programs through the ⇨ (video input) jack

Change the "COLOR SYSTEM" setting or adjust the "COLOR" level in the on-screen display until the color becomes normal.

Note

- Normally set "COLOR SYSTEM" to "AUTO".

If the sound is distorted or noisy when receiving programs through the ⅂ (antenna) terminal

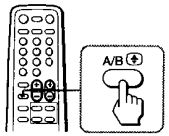
Change the "TV SYSTEM" setting in the on-screen display until the sound becomes clear.

Selecting a stereo or bilingual program

■ ***KV-J21MH2/J21MN21 only***

Press A/B ⊕ repeatedly until you receive the sound you want.

The on-screen display changes corresponding to the selected sound and the ◴/◌◌ indicator also lights up.



When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	NICAM (Stereo sound) → MONO (Regular sound)
NICAM bilingual	NICAM MAIN (Main sound) → NICAM SUB (Sub sound) → MONO (Regular sound)
NICAM monaural	NICAM MAIN (Main sound) → MONO Regular sound)

When receiving an A2 (German) program

Broadcasting	On-screen display (Selected sound)
A2 (German) stereo	STEREO (Stereo sound)
A2 (German) bilingual	MAIN (Main sound) → SUB Sub sound)

Receiving area for NICAM and A2 (German) programs

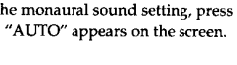
System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, Malaysia, Thailand etc.
A2 (German)	Australia, Malaysia, Thailand, etc

Notes

- If the signal is very weak, the sound becomes monaural automatically.
- If the stereo sound is noisy when receiving a NICAM program, select "MONO". The sound becomes monaural, however, the noise will be reduced.

If the sound is distorted or noisy when receiving a monaural program through the ⅂ (antenna) terminal

Press A/B ⊕ repeatedly until "MONO" appears on the screen.



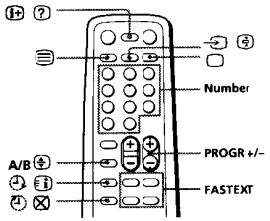
To cancel the monaural sound setting, press A/B ⊕ again until "AUTO" appears on the screen.

Notes

- The "MONO" or "AUTO" setting is memorized for each program position.
- You cannot receive stereo signal when the TV is in the "MONO" setting.

Viewing Teletext

■ ***KV-J21MN21 only***



Displaying Teletext

1 Select a TV channel which carries the Teletext broadcast you want to watch.

2 Press ☰ to display the Teletext.

A Teletext page (normally the index page) appears on the screen. If there is no Teletext broadcast, 100 appears at the top left corner of the screen

To turn off Teletext, press ▢.

Checking the contents of a Teletext service

Press ⏲ ⓘ to display an overview of the Teletext contents and page numbers.

Selecting a Teletext page

Press the number buttons to enter the three-digit page number of the Teletext page you want.

If you make a mistake, enter the correct page number again.

To access the next or previous page, press PROGR +/–.

You can also access a Teletext page of any page numbers that appear in the colored column at the bottom of the screen using the corresponding color-coded button on the remote commander.

Holding a Teletext page

Press ⇄ ⊕.

The symbol "⊕" appears at the top left corner of the screen.

To resume normal Teletext operation, press ⇄ ⊕ again or ☰.

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT program is broadcasted, the colored menus appear at the bottom of the screen. The colors of the menus correspond to the red (+), green (SELECT), yellow (–), and blue (PIC MODE) color-coded buttons on the remote commander.

To access a FASTEXT menu, press the color-coded button on the remote commander that corresponds to the colored menu which appears at the bottom of the screen. The menu page appears on the screen after several seconds.

Revealing concealed information

Press ⓘ ?.

To conceal the information, press ⓘ ? again.

Enlarging the Teletext display

Press A/B ⊕.

Each time you press A/B ⊕, the Teletext display changes as follows:

Enlarge upper half → Enlarge lower half → Normal size

Superimposing a Teletext page on the TV picture

Press ☰.

Each time you press ☰, the screen changes as follows:

Teletext → Teletext and TV → TV

Waiting for a Teletext page while watching a TV program

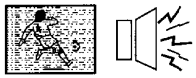
1 Enter the page number of the Teletext you want to refer, then press ⏲ ⊠.

2 When the page number appears on the screen, press ☰ to turn on the Teletext.

Troubleshooting

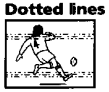
If you have any problems, read this manual again and check the countermeasure for each of the symptoms listed below.
If the problem persists after trying the methods below, contact your nearest authorized service center or dealer.

Snowy picture
Noisy sound



➡ Check the antenna.
➡ Check the antenna connection on the TV and on the wall.
➡ Check the TV SYSTEM setting.

Dotted lines or stripes

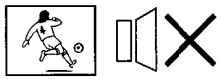


➡ This may be caused by local interference (e.g. cars, neon signs and hair dryers). Adjust the antenna for minimum interference.

Double images or "ghosts"

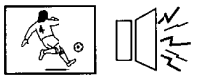
➡ This may be caused by reflections from nearby mountains or buildings. A high directional antenna may improve the picture.

Good picture
No sound



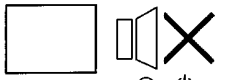
➡ Press 🔊+.
➡ Press 🔇.
➡ Press A/B ⊕ (KV-J21MF2/J21MN21).

Good picture
Noisy sound



➡ Check the TV SYSTEM setting.
➡ Reduce the TREBLE level or select the "SOFT" sound mode.

No picture
No sound



➡ Press ⏻ or ⏻.
➡ Check the antenna connection.
➡ Check the VCR connections.
➡ Check the power cord connection.
➡ Check the standby mode

No color

➡ Adjust the COLOR level in the on-screen display.
➡ Check the COLOR SYSTEM setting.

TV cannot receive stereo signal

➡ Press A/B ⊕ until "AUTO" appears on the screen (KV-J21MH2/J21MN21).

TV cabinet creaks

➡ Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

Note on the remote commander

- The supplied remote commander is used on several models of the TV. If you do not find instructions for some controls that are on the remote commander, that means your TV does not employ the features of those controls, e.g. SOUND MODE and ☰.

Notes

- When you turn on the TV, you may hear the "boon" sound that is caused by the demagnetization of the TV. This does not indicate a malfunction.
- The picture color may become abnormal if you change the direction of your TV. To obtain the normal picture color, press ⏻ on the TV to turn off the TV for five minutes and then turn it on again.
- Design and specifications are subject to change without notice.
- All contents in the instruction manual are subject to change without notice.

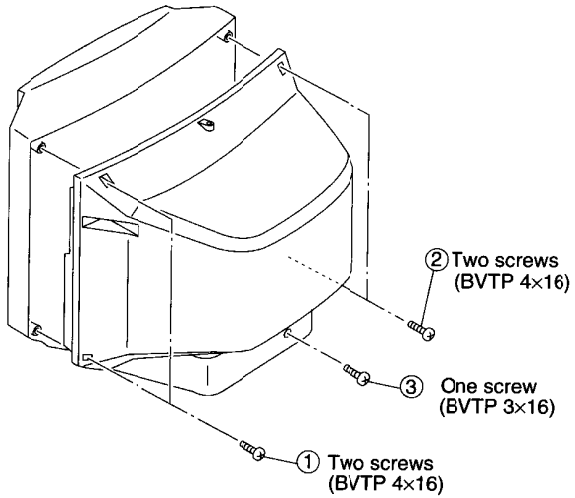
WARNING

Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

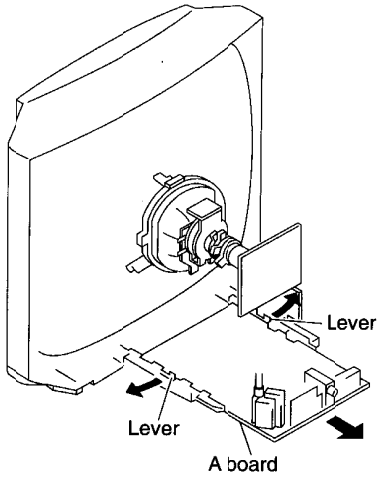
KV-J21MF2/J21MH2/J21MN21
RM-869

SECTION 2
DISASSEMBLY

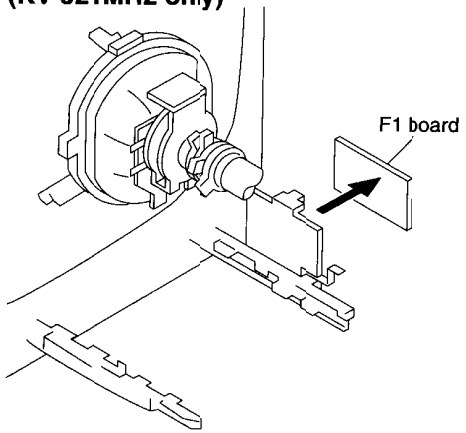
2-1. REAR COVER REMOVAL



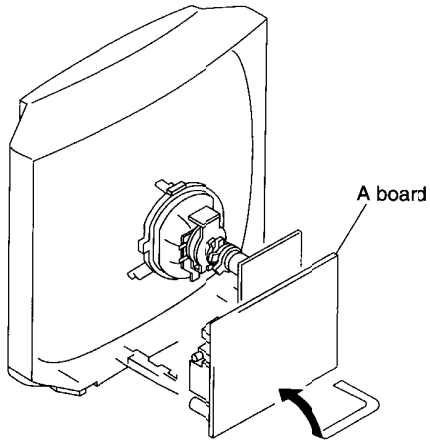
2-2. A BOARD REMOVAL



2-3. F1 BOARD REMOVAL (KV-J21MH2 only)



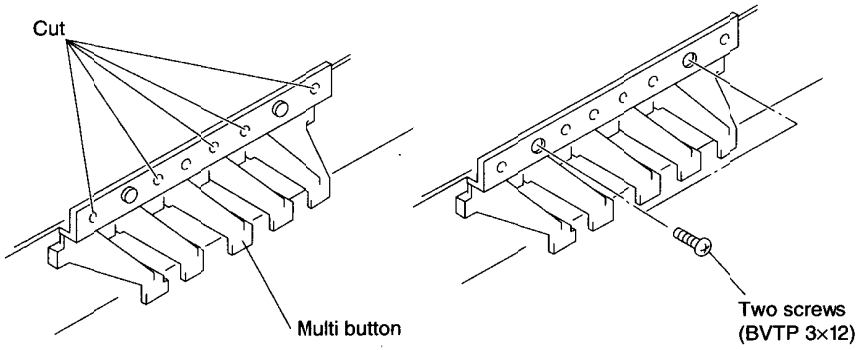
2-4. SERVICE POSITION



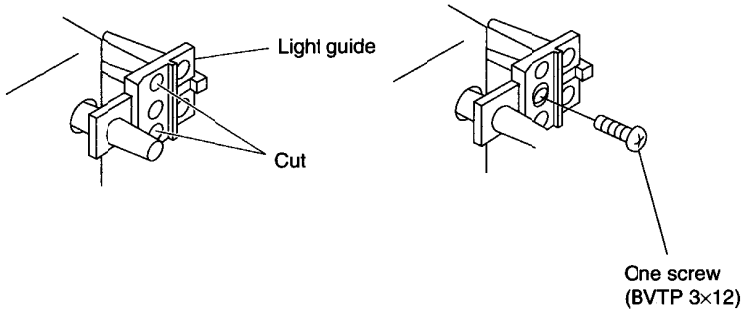
2-5. REPLACEMENT OF PARTS

For replacement of the Multi Button and Light Guide, cut the welded portions from them, exchange with the new parts, and fix them with screws (+BVTP) respectively.

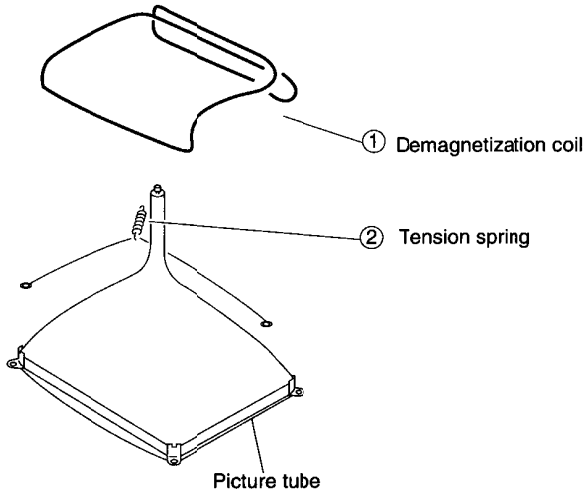
2-5-1. REPLACEMENT OF MULTI BUTTON



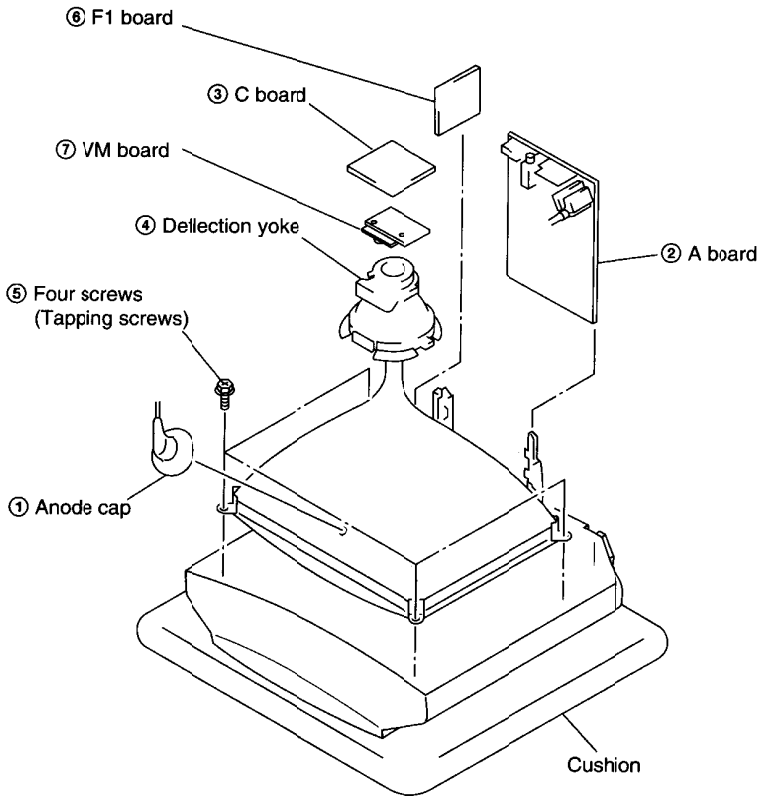
2-5-2. REPLACEMENT OF LIGHT GUIDE



2-6. DEMAGNETIZATION COIL REMOVAL



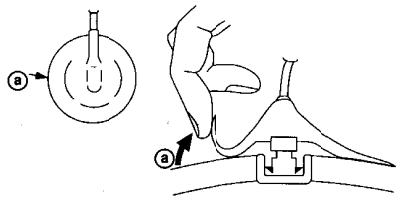
2-7. PICTURE TUBE REMOVAL



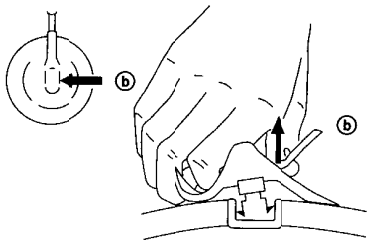
• REMOVAL OF ANODE-CAP

NOTE : After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

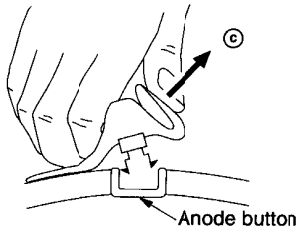
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



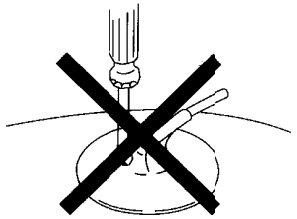
② Using a thumb press down, then pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.

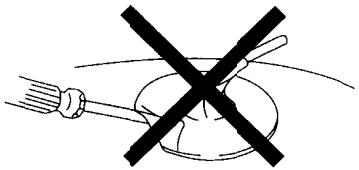


③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ.

• HOW TO HANDLE AN ANODE-CAP

① Do not damage the surface of anode-cap with sharp shaped objects.
② Do not press the rubber too hard so as not to damage the inside of anode-cap.
A metal fitting called the shatter-hook terminal is built into the rubber.
③ Do not turn the foot of rubber over too hard.
The shatter-hook terminal will stick out or damage the rubber.





SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:
PICTURE control ..... normal
BRIGHTNESS control ..... normal

Perform the adjustments in the following order:

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required:

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparation :

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the power and degauss with the degausser.

3-1. BEAM LANDING

1. Input a white signal with the pattern generator.
   Contrast } normal
   Brightness }
2. Position neck assy as shown in Figure 3-1.
3. Set the pattern generator raster signal to green.
4. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
   (See Figures 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that entire screen is green. (See Figure 3-1.)
6. Switch the raster signal to blue, then to red and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Figure 3-4.)

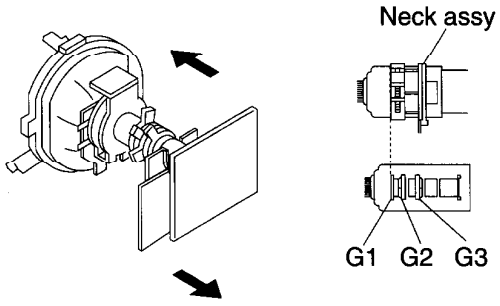


Fig. 3-1

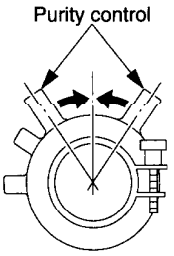


Fig. 3-2

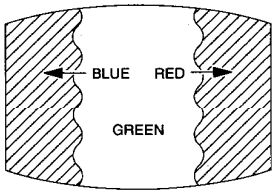


Fig. 3-3

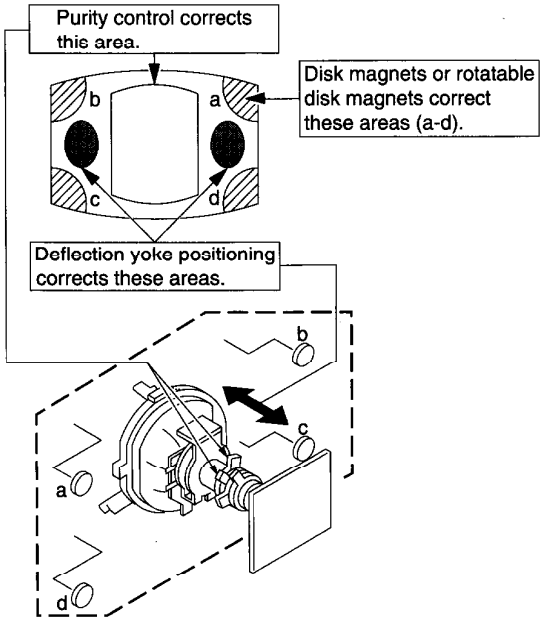


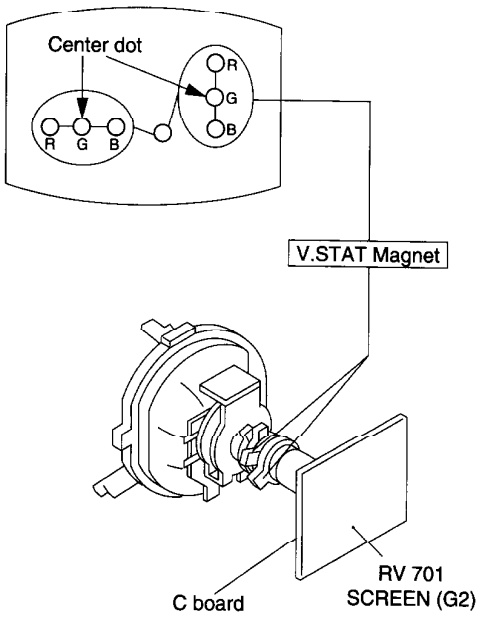
Fig. 3-4

3-2. CONVERGENCE

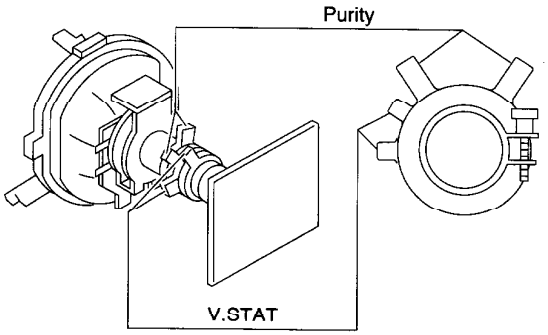
Preparation :

- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

(1) Horizontal and Vertical Static Convergence

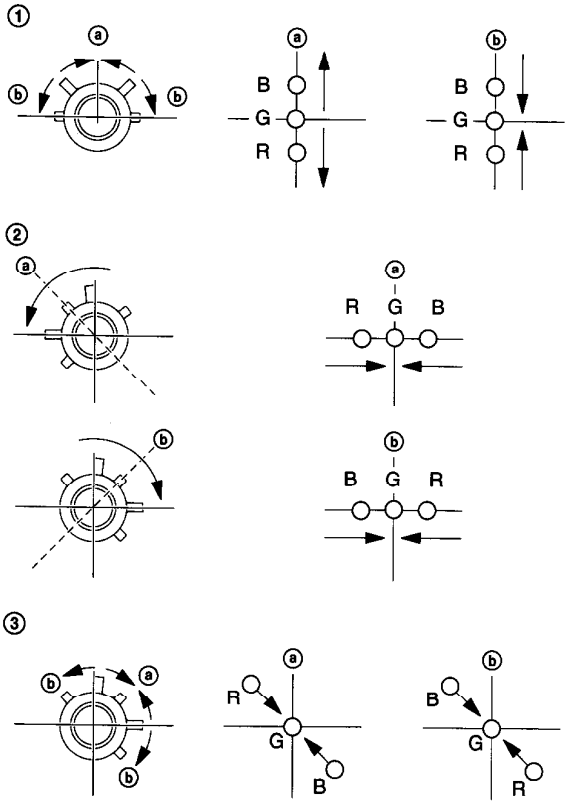


1. (Moving vertically), adjust the V.STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.
2. (Moving horizontally), adjust the H.STAT VR so that the red, green and blue dots are on top of each other at the center of the screen.



- Operation of V.STAT magnet.

If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green and blue dots move as shown below.



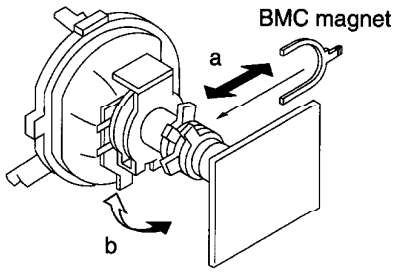
- Operation of BMC (Hexapole) magnet.

If the blue or red dot does not converge with the other two dots, perform following steps.

Move BMC magnet (a) to correct insufficient H.static convergence.

Rotate BMC magnet (b) to correct insufficient V.static convergence.

In either case, repeat Beam Landing Adjustment.

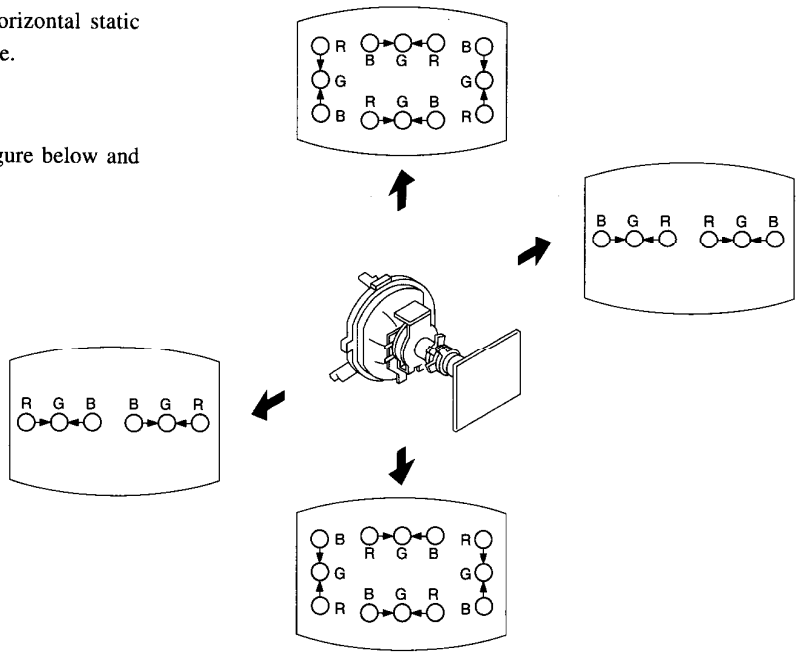


(2) Dynamic Convergence Adjustment

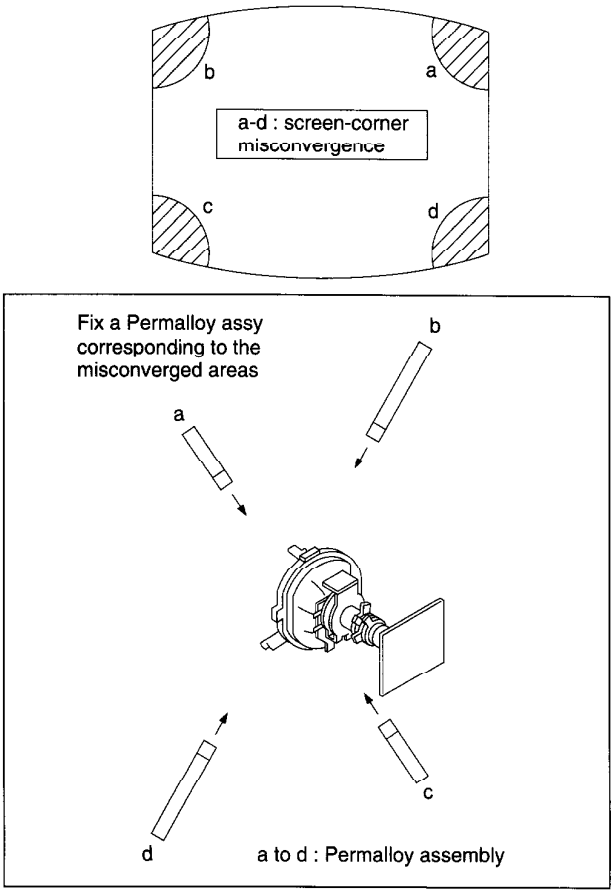
Preparation :

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the deflection yoke spacer.

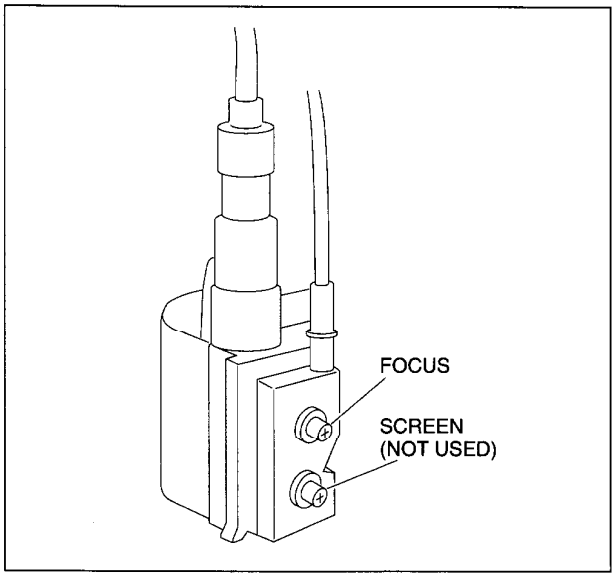


(3) Screen-corner Convergence



3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for the best focus.



Note: Screen VR is not used.

a. AN ITEM OF ADJUSTMENT

Item number	Adjustment Item	Initial DATA	Note
09	RDR	28	WHITE POINT R
0A	GDR	20	WHITE POINT G
0B	BDR	20	WHITE POINT B

b. METHOD OF CANCELLATION FROM SERVICE MODE

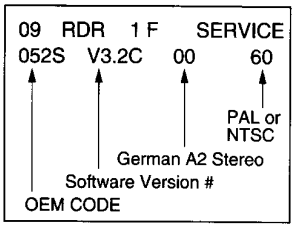
Set the standby condition (Press [POWER] button on the commander) and then press [POWER] button again, hereupon it becomes TV mode.

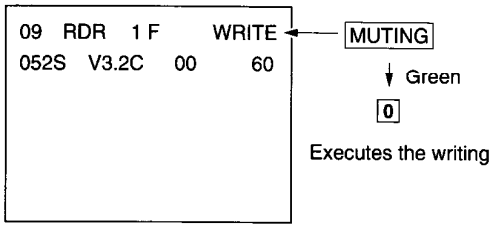
c. METHOD OF WRITE FOR MEMORY

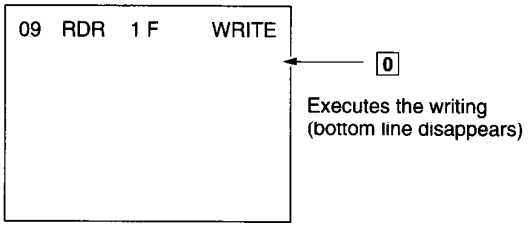
1) Set to Service Mode.
2) Press [1] (UP) and [4] (DOWN) to select an item of adjustments.
3) Press [MUTING] button and it will indicate WRITE on screen.
4) Press [0] button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again, confirm they were adjusted.



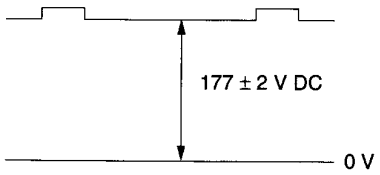




3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT (RV701)

1) Set the PICTURE and BRIGHTNESS to normal.
2) Put to VIDEO input mode without signals.
3) Connect R, G and B of the C board cathode to the oscilloscope.
4) Adjust G2 (RV701) volume to the value below.



2. WHITE BALANCE ADJUSTMENTS

1) Set to Service Mode.
2) Input an entire white signal.
3) Set the PICTURE to maximum.
4) Select RDR(09) with [1] and [4], and then set the level to 25 with [3] and [6].
5) Select GDR(0A) and BDR(0B) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
6) Write into the memory by pressing [MUTING], then [0].

SECTION 4
SELF DIAGNOSIS FUNCTION

If no acknowledgement is returned from a device which is turned "ON", the device has a problem.
In this case, one of the LED's responding to the problem device will flicker a defined number of times.

Flickering is operated by lighting the LED's for 60ms each time.

The flickering frequency responding to each failed device is shown below.

Board name	A Board	A Board
Ref. No.	IC003	IC300
Device	NONVOLATILE MEMORY (ST24C04CB1)	Y/C JUNGLE (TDA8375A)
Flickering Frequency	1	3

All the devices are checked one after another from the left of the table.
If an error is found, the responding LED will start flickering.
So, if more than 1 device have failed, only the one on the left side will flicker.

SECTION 5
CIRCUIT ADJUSTMENTS

5-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-869 that comes with this unit.

Entering service mode

With the unit on standby

↓

[DISPLAY]

↓

[5]

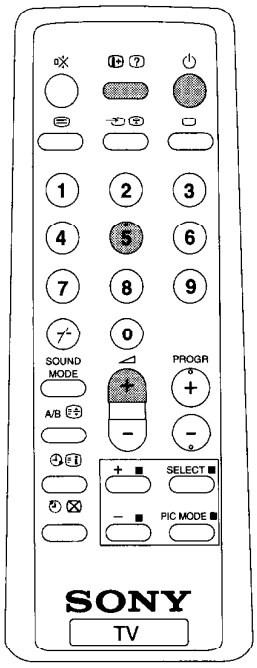
↓

[VOL (+)]

↓

[POWER]

The operation sequence puts the unit into service mode.

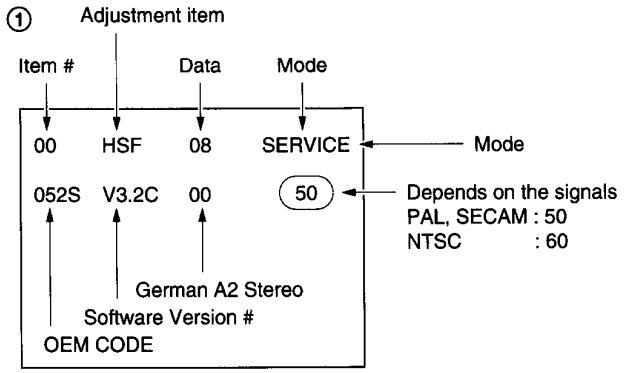


RM-869

[1], [4]	Raise/lower the service item number
[3], [6]	Raise/lower the data
[MUTING]	Writes
[0]	Executes the writing

[7], [0]	All data becomes the values in memory
[8], [0]	All user control goes to the standard state
[5], [0]	Service data initialization (Be sure not to use usually.)
[2], [0]	Write 50Hz adjustment data to 60Hz, or viceversa.

The screen display is :



②

3D	OP0	00	SERVICE
0000	0000	00	50

(Bit options adjustable)

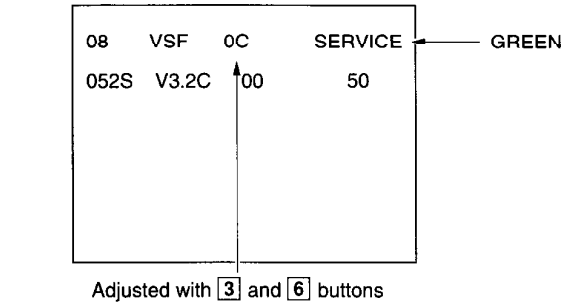
[1], [4]	Select the adjustment item.
↓	
[3], [6]	Raise/lower the data.
↓	
[MUTING]	Writes
↓	
[0]	Executes the writing.

5-2. ADJUSTMENT METHOD

Item Number 08

This explanation uses V-SHIFT as an example.

1. Select 08 V-SHIFT with the [1] and [4] buttons.
2. Raise/lower the data with the [3] and [6] buttons.
3. Select the optimum state. (The standard is 0F for PAL reception.)
4. Write with the [MUTING] button.
5. Execute the writing with the [0] button. (The WRITE display returns to green SERVICE.)



Use the same method for Items Number 00-41. Use [1] and [4] to select the adjustment item, use [3] and [6] to adjust, write with [MUTING], then execute the write with [0].

Adjustment Item Table

Item No.	Adj. Item	Data Range	Initial Data	Note for Different Data	Function	Device
00	HSF	00–3F		50:2C 60:33 RGB50:31 RGB60:38	H Shift	TDA8375
01	HSZ	00–3F		50:35 60:35 RGB50:3A RGB60:3A	H Size	TDA8375
02	PAP	00–3F		50: 25 60: 25	Pin Amplitude	TDA8375
03	CNP	00–3F		50: 10 60: 0C	Corner Pin	TDA8375
04	TLT	00–3F		50: 20 60: 2D	Tilt	TDA8375
05	VSL	00–3F		50: 1F 60: 1F	V Slope	TDA8375
06	VAP	00–3F		50: 1C 60: 1B	V Amplitude	TDA8375
07	SCR	00–3F		50: 16 60: 16	S Correction	TDA8375
08	VSF	00–3F		50: 10 60: 10	V Shift	TDA8375
09	RDR	00–3F	28		R Drive	TDA8375
0A	GDR	00–3F	20		G Drive	TDA8375
0B	BDR	00–3F	20		B Drive	TDA8375
0C	FO	00–03		TV: 00 VIDEO: 00 TEXT: 00	ø1 TIME CONSTANT	TDA8375
0D	AGC	00–3F		TV: 28 VIDEO: 28 TEXT: 28	AGC Take Over	TDA8375
0E	VSW	00–01		TV: 00 VIDEO: 01 TEXT: 00	Video Mute Switch	TDA8375
0F	FOR	00–03	03		Forced Field Frequency	TDA8375
10	DL	00–01	00		De-interlace	TDA8375
11	POC	00–01	00		Fixed ø1 Synchro. Mode	TDA8375
12	COR	00–01		TV: 01 VIDEO: 00 TEXT: 00	Noise Coring	TDA8375
13	VPX	00–FF	00		Extra Bits (see below)	TDA8375
14	PMX	00–3F	27	TV: 2B VIDEO: 2B TEXT: 2B	Picture Maximum Data	TDA8375
15	PMI	00–3F	04		Picture Minimum Data	TDA8375
16	SBR	00–7F	4B		Sub Brightness	TDA8375
17	SHU	00–0F	07		Sub Hue	TDA8375
18	SSH	00–03		TV: 01 VIDEO: 03	Sub Sharpness	TDA8375
19	SC1	00–3F		50: 26 60: 29	Sub Color Lower	TDA8375
1A	SC2	00–3F		50: 0C 60: 0D	Sub Color Higher	TDA8375
1B	AIP	00–7F	3F		Adjustment IF-PLL	TDA8375
1C	VZM	00–3F	19		Vertical Zoom	TDA8375
1D	WST	00–FF	15		W/G Stereo Threshold	MSP3410D
1E	WBT	00–FF	EA		W/G Bilingual Threshold	MSP3410D
1F	WLL	00–FF	05		W/G Monaural Threshold	MSP3410D
20	ACG	00–01	01		ACG Switch auto/constant	MSP3410D
21	CDB	00–3F	28		ACG Gain at Constant Mode	MSP3410D
22	FGP	00–7F	1B		FM Prescale for B/G, I. DK	MSP3410D
23	FMP	00–7F	32		FM Prescale for M	MSP3410D
24	FMH	00–7F	36		FM Prescale for HDEV (non-M)	MSP3410D
25	FMM	00–7F	65		FM Prescale for HDEV (M)	MSP3410D
26	WGP	00–7F	2A		W/G Prescale	MSP3410D
27	NIP	00–7F	6D		NICAM Prescale	MSP3410D
28	SCP	00–7F	3B		SCART Input Prescale	MSP3410D
29	SCV	00–7F	2A		SCART Output Prescale	MSP3410D
2A	CRM	00–01	00		Carrier Muting on/off	MSP3410D
2B	ACO	00–01	01		Audio Clock-out on/off	MSP3410D
2C	WAC	00–0F	00		W/G Agreement Count	MSP3410D
2D	NFT	00–FF	50		Auto FM Switch Threshold	MSP3410D
2E	DLG	00–FF	30		W/G Search Delay	MSP3410D
2F	DLN	00–FF	20		NICAM Search Delay	MSP3410D
30	DLS	00–FF	10		Stereo Status Read Delay	MSP3410D
31	SMX	00–7F	78		DFP Volume Maximum	MSP3410D
32	ING	00–0F	00	M: 00 non-M: 00 VIDEO: 00	Input Gain	TDA7438
33	VOM	00–3F	01	M system only	Volume Output Gain	TDA7438
34	TXH	00–03	01		Teletext Horizontal Position	SAA5261
35	BKP	00–3F	00		Picture Data at Blanking OFF	Other Control
36	ODL	00–FF	10		Power on Delay	Other Control
37	OFR	00–0F	00		RGB Output Time (STBY OFF)	Other Control

Item No.	Adj. Item	Data Range	Initial Data	Note for Different Data	Function	Device
38	OFM	00–0F	00		RGB Output Time (AC OFF)	Other Control
39	OSH	00–3F	0A		OSD H POSITION	Other Control
3A	DKS	00–01	01		D/K Stereo enable/disable	Other Control
3B	MUT	00–01	00		Muting on/off at No. Sync	Other Control
3C	ABL	00–01	00		Bright ABL Switch	Other Control
3D	SCM	00–01	00		SECAM Trap active/inactive	Other Control
3E	FBT	00–01	01		FBT L/S C/M strict/plain	Other Control
3F	OP0	00–FF	2F		Optional Flags 0 (see below)	Other Control
40	OP1	00–FF	0F		Optional Flags 1 (see below)	Other Control
41	OP2	00–FF	00		Optional Flags 2 (see below)	Other Control

NOTE

- Note for Different Data — Those are the standard data values written on the microprocessor. Therefore, the data values of the modes are stored respectively in the memory.
  In case of a device replacement, adjustment by rewriting the data value is necessary for some items.
- 50 ..... 50 Hz data
- 60 ..... 60 Hz data
- Note for Different Data listed on the adjustment item table are reference values, therefore it is different for every model.

Option Note

Item No. 13 VPX

Item	HCO	EVG	SBL	PRD	–	–	–	VID
Initial data	0	0	0	0	0	0	0	0

HCO EHT Tracking Mode 1 = on V and E–W. 0 = only on V
EVG Enable Vertical Guard 1 = enable. 0 = disable
SBL Service Blanking 1 = active. 0 = inactive
PRD Over-voltage Protection Detection 1 = enable. 0 = disable
VID Video Ident Mode 1 = not for ø1-loop 0 = for ø1-loop

Item No. 3F OP0

Item	No TOP	AV input		AVMUT	B/G	I	D/K	M
Initial data	0	1	0	0	1	1	1	1

AV Input 0 0 no AV input model 0 1 1 AV input model
1 0 2 AV input model 1 1 2 AV input and RGB input model
No TOP (for teletext model) 1 = only FLOF available. 0 = both FLOF and TOP available
AV MUT 1 = AV multi is always muted if no signal input. 0 = not muted always
Other optional bits are effective if set to 1.

Item No. 40 OP1

Item	No NICAM	–	HDEV	1 V-Curve	XTAL SEL		SECAM	2nd Lang.
Initial data	0	0	0	0	1	1	1	1

XTAL SEL 0 0 only 4.43 XTAL 0 1 only 3.58 XTAL
1 0 (not used) 1 1 both 4.43 and 3.58 XTAL
1 V-Curve (for monaural model)
1 = using common volume curve for every mode and every TV system
0 = another volume curve available for video mode and M system
HDEV 1 = High Deviation Mode switch available. 0 = not available
Other optional bits are effevctive if set to 1.

Item No. 41 OP2

Item	–	–	No. Bal	TV Out	Hotel	VM	D.B.F.B.	Thai Bil.
Initial data	0	0	0	0	0	0	0	0

No Bal. (for AV stereo model) 1 = no balance in analog select items. 0 = balance included
Other optional bits are effective if set to 1.
Hotel TV mode should be switched with remote commander from STBY condition as below.
Hotel TV on : push "display". "8". "vol +" and "power" sequentially
Hotel TV off : push "display". "8". "vol –" and "power" sequentially

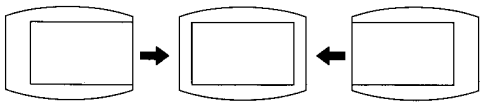
5-3. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons [5] and [0] (Data Initialize), and [2] and [0] (Data Copy) to initialize the data.
3. Call each item number, and check if the respective screen shows the normal picture.
   In case some items are not well-adjusted, give them fine adjustment.
   Write the data per each item number ([MUTING] + [0]).
4. Select item numbers "3F" (OP0), "40" (OP1), and "41" (OP2) and respectively set the bit per model with command buttons [3] and [6].
5. Press commander buttons [8] and [0] (Test Normal) to return to the data that was set on the shipment from the factory.
   (= Cancel Service Mode.)

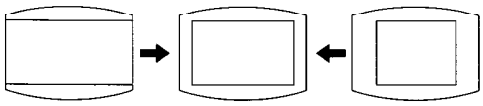
5-4. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 08

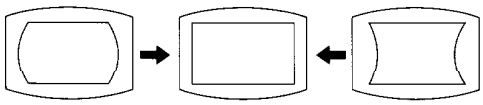
00 HSF (H SHIFT)



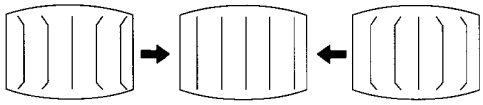
01 HSZ (H SIZE)



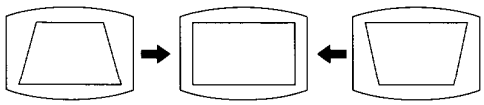
02 PAP (PIN AMPLITUDE)



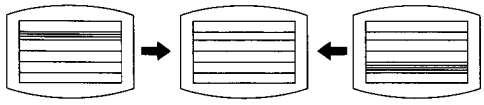
03 CNP (CORNER PIN)



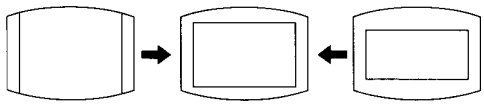
04 TLT (TILT)



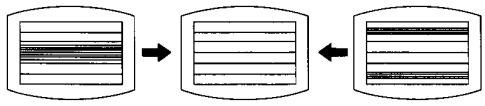
05 VSL (V SLOPE)



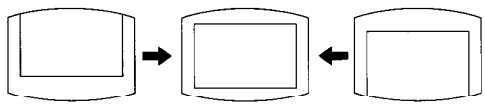
06 VAP (V AMPLITUDE)



07 SCR (S CORRECTION)

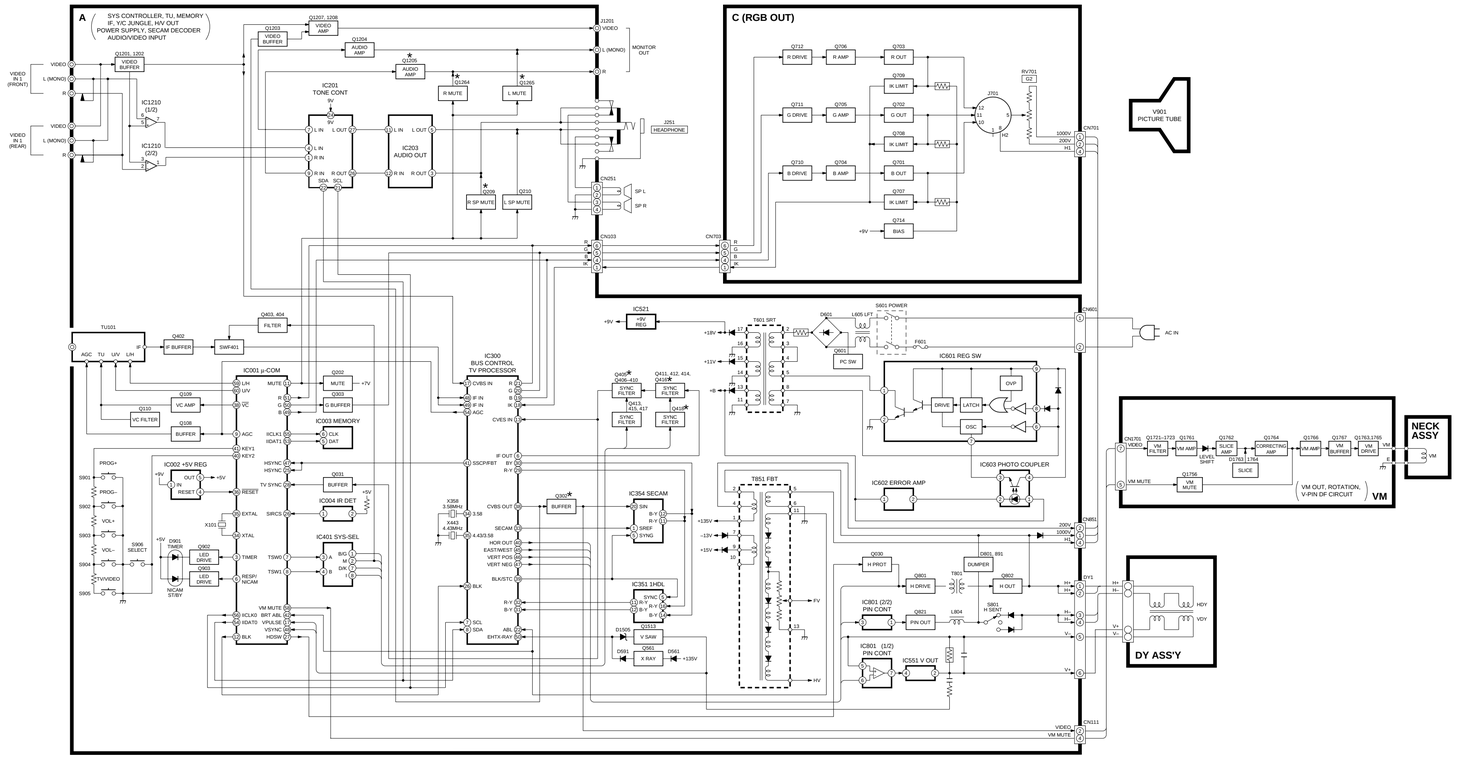


08 VSF (V SHIFT)

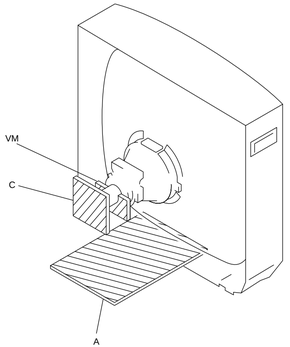


SECTION 6
DIAGRAMS

6-1. BLOCK DIAGRAM



6-2. CIRCUIT BOARDS LOCATION



6-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in µF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.
  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)
- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a color-bar signal input.
  no mark : PAL
  ( ) : SECAM
  [ ] : NTSC 3.58
  « » : NTSC 4.43
- Readings are taken with a 10 MΩ digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- : Can not be measured.
- Circled numbers are waveform reference.
- : B + bus.
- : B – bus.
- : signal path.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFRAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: *	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Terminal name of semiconductors in silk screen printed circuit (＊)

	Device	Printed symbol	Terminal name	Circuit
①	Transistor		Collector / Base / Emitter	
②	Transistor		Collector / Base / Emitter	
③	Diode		Cathode / Anode	
④	Diode		Cathode / Anode (NC)	
⑤	Diode		Cathode / Anode (NC)	
⑥	Diode		Common Anode / Cathode	
⑦	Diode		Common Anode / Cathode	
⑧	Diode		Common Anode / Anode	
⑨	Diode		Common Anode / Anode	
⑩	Diode		Common Cathode / Cathode	
⑪	Diode		Common Cathode / Cathode	
⑫	Diode		Anode / Cathode Anode / Anode Cathode / Anode	
⑬	Transistor (FET)		Drain / Source Gate	
⑭	Transistor (FET)		Drain / Source Gate	
⑮	Transistor (FET)		Source / Drain / Gate	
⑯	Transistor		Emitter / Collector / Base	
⑰	Transistor		2SA1421 E2 B2 C1	
⑱	Transistor		C1815-Y E1 B2 C3	
⑲	Transistor		C1 B2 E3 E1 B3 C2	
⑳	Transistor		C1 B2 E2 E1 B3 C3	
㉑	Transistor		E2 B1 E1 C2 C1B2	
㉒	Transistor		9013 B1 E1 E2 C1 C2	
㉓	Transistor		9013 E2 B1 B2 C2 C1	
–	Discrete semiconductor			

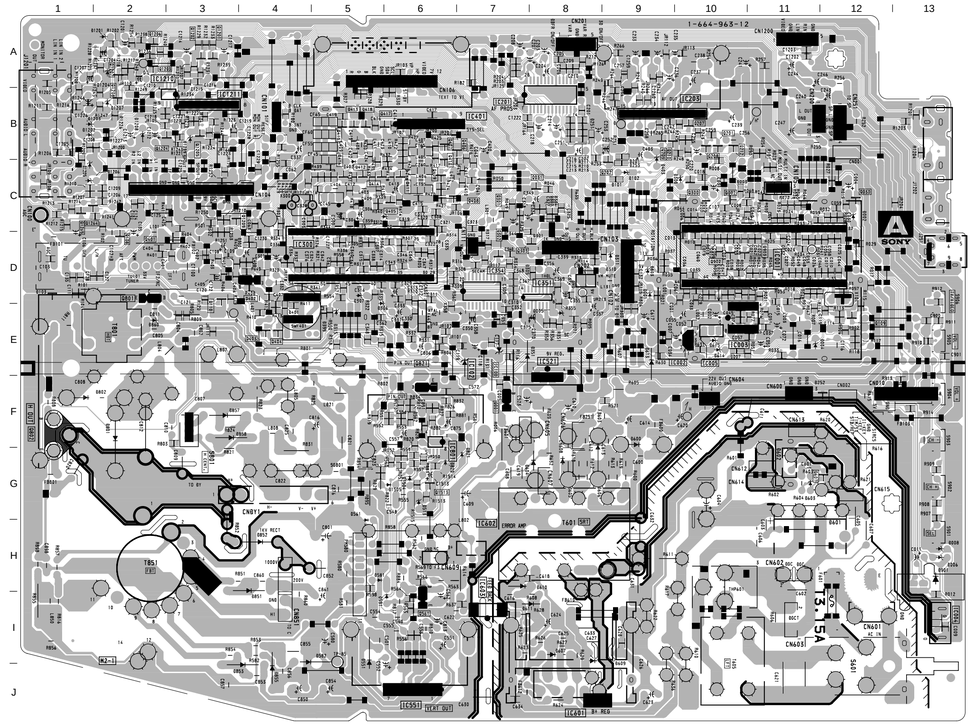
(Chip semiconductors that are not actually used are included.)

Ver.1.5

PRINTED WIRING BOARD

A [SYS CONTROLLER, TU, MEMORY, IF, Y/C JUNGLE, H/V OUT, POWER SUPPLY, SECAM DECODER, AUDIO/VIDEO INPUT]

– A BOARD –



A BOARD

IC

IC001	D–11
IC002	E–10
IC003	E–10
IC004	I–13
IC100	E–7
IC201	B–8
IC203	B–10
IC300	D–4
IC351	D–8
IC354	D–7
IC401	B–7
IC521	E–8
IC551	J–6
IC601	J–8
IC602	H–7
IC603	H–7
IC801	F–6
IC1210	A–2

TRANSISTOR

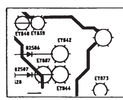
		*
Q030	C–12	1
Q108	D–2	1
Q109	E–12	1
Q110	E–3	1
Q202	C–9	1
Q207	B–10	1
Q208	B–10	1
Q209	B–9	1
Q210	B–10	1
Q301	C–7	1
Q302	D–7	1
Q303	D–8	1
Q402	D–4	1
Q403	E–4	1
Q404	E–4	1
Q405	C–6	1
Q406	B–7	1
Q407	B–6	1
Q408	C–7	1
Q409	C–6	1
Q410	C–6	1
Q411	C–6	1
Q412	C–5	1
Q413	B–5	1
Q414	C–5	1
Q415	B–5	1
Q416	C–5	1
Q417	B–6	1
Q418	B–5	1
Q561	I–6	–
Q801	D–2	–
Q802	F–1	–
Q821	E–6	–
Q902	D–10	1
Q903	D–11	1
Q1201	A–3	1
Q1202	A–3	1
Q1203	A–2	1
Q1204	B–2	1
Q1205	B–3	1
Q1207	A–2	1
Q1208	B–2	1
Q1209	C–4	1
Q1264	C–1	1
Q1265	C–1	1
Q1513	G–6	1

DIODE

		*
D001	D–9	–
D002	C–12	–
D003	C–10	3
D005	E–8	–
D008	H–13	–
D103	D–1	6
D201	B–9	3
D251	B–8	3
D252	F–12	4
D253	C–9	3
D301	D–8	3
D305	D–8	3
D306	E–6	–
D307	D–5	–
D308	C–10	–
D310	D–9	3
D311	D–9	–
D312	C–6	–
D315	E–5	–
D351	E–8	–
D399	E–5	3
D401	E–4	3
D402	C–5	–
D403	C–9	–
D513	G–6	–
D551	I–5	–
D561	G–5	–
D591	I–6	–
D601	H–12	–
D604	G–8	–
D605	G–8	–
D606	G–9	–
D607	I–8	–
D609	I–9	–
D610	H–8	–
D611	I–8	–
D613	E–9	–
D801	F–2	–
D802	F–2	–
D851	H–4	–
D852	H–4	–
D853	I–3	–
D855	J–4	–
D857	F–3	–
D858	F–4	–
D860	E–2	–
D901	H–13	–
D1201	A–2	–
D1202	B–1	–
D1203	B–1	–
D1207	B–2	–
D1208	B–2	–
D1209	B–3	–
D1504	G–6	–
D1505	G–6	–

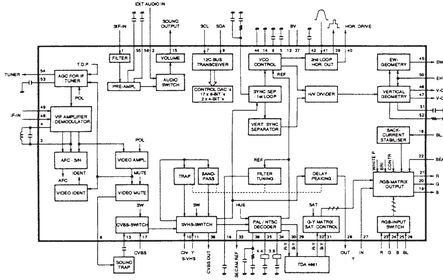
A BOARD WAVEFORMS

1	2	3 PAL	3 SECAM	3 NTSC	4 PAL
5.0Vp-p	2.7Vp-p	0.7Vp-p (H)	0.7Vp-p (H)	1.3Vp-p (H)	0.5Vp-p (H)
4 SECAM	4 NTSC	5 PAL/SECAM	5 NTSC	6 PAL	6 SECAM
0.6Vp-p (H)	1.0Vp-p (H)	PAL : 1.4Vp-p (H) SECAM : 1.3Vp-p (H)	1.5Vp-p (H)	1.1Vp-p (H)	1.2Vp-p (H)
6 NTSC	7 PAL/SECAM	7 NTSC	8 PAL/SECAM	8 NTSC	9 PAL/SECAM
1.0Vp-p (H)	PAL : 2.7Vp-p (H) SECAM : 2.9Vp-p (H)	2.9Vp-p (H)	PAL : 2.6Vp-p (H) SECAM : 2.6Vp-p (H)	2.7Vp-p (H)	2.5Vp-p (H)
9 NTSC	10 PAL	10 SECAM	10 NTSC	11 PAL	11 SECAM
2.3Vp-p (H)	2.2Vp-p (H)	2.2Vp-p (H)	2.4Vp-p (H)	0.9Vp-p (H)	1.3Vp-p (H)
11 NTSC	12 PAL	12 SECAM	12 NTSC	13 PAL	13 SECAM
1.0Vp-p (H)	0.7Vp-p (H)	0.7Vp-p (H)	1.3Vp-p (H)	0.5Vp-p (H)	0.6Vp-p (H)
13 NTSC	14	15	16		
1.0Vp-p (H)	140Vp-p	1030Vp-p	1.5Vp-p (V)		

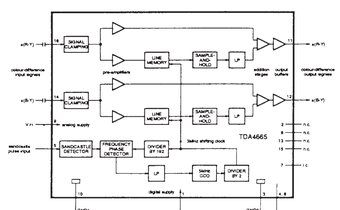


NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Please pay attention while inspecting or reparing it to prevent an electric shock.

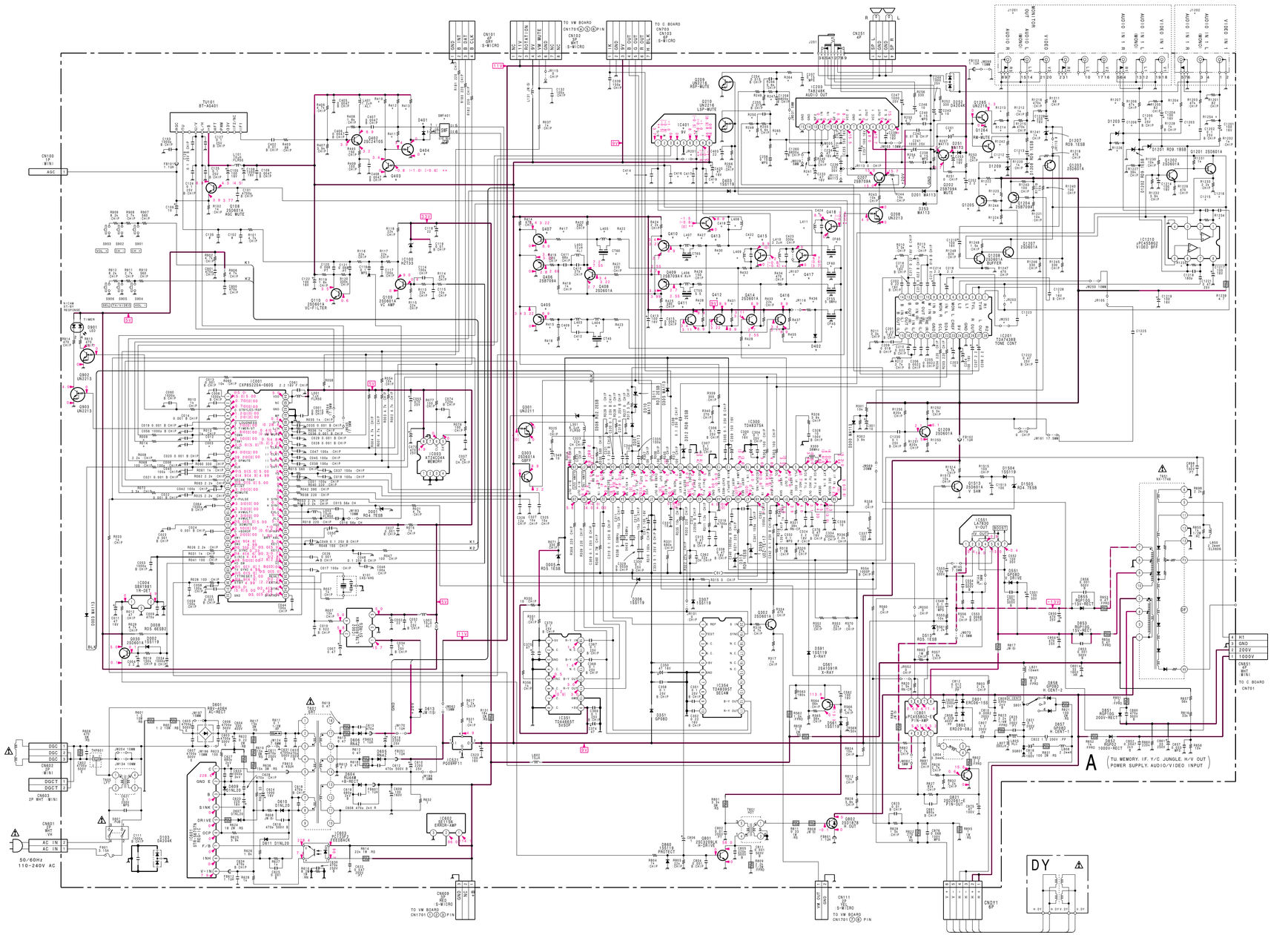
A BOARD IC300 TDA8735A



A BOARD IC351 TDA4665T-T



(1) Schematic Diagram of A Board



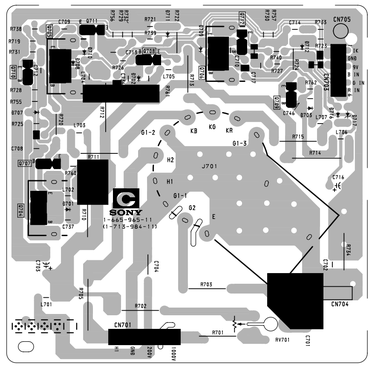
A BOARD * MARK LIST

	KV-2199M5J	KV-J21MF2J		KV-2199M5J	KV-J21MF2J
C003	#	100p 50V : CHIP	Q413	#	UN2216-TX
C012	#	100p 50V : CHIP	Q415	#	UN2216-TX
C409	#	47p 50V CH : CHIP	Q416	#	2SD601A
C412	#	68p 50V CH : CHIP	Q417	#	UN2216-TX
C414	#	100p 50V : CHIP	Q418	#	UN2216-TX
C416	#	100p 50V : CHIP	Q1205	#	2SB709A
C417	#	100p 50V : CHIP	Q1264	#	UN2216-TX
C418	#	390p 50V : CHIP	R009	#	1k : CHIP
C419	#	100p 50V : CHIP	R014	#	1k : CHIP
C422	#	330p 50V CH : CHIP	R058	#	4.7k : CHIP
C424	#	470p 50V CH : CHIP	R247	10k : CHIP	1k : CHIP
C1203	#	0.1 25V B : CHIP	R248	10k : CHIP	1k : CHIP
C1206	#	0.1 25V B : CHIP	R249	15k : CHIP	1k : CHIP
C1212	#	1 50V	R250	15k : CHIP	1k : CHIP
C1215	#	180p 50V B : CHIP	R264	4.7k : CHIP	3.3k : CHIP
C1216	#	0.47 25V B : CHIP	R265	4.7k : CHIP	3.3k : CHIP
C1223	#	1 16V B : CHIP	R410	#	10k : CHIP
C1225	0.47 25V	#	R411	#	2.2k : CHIP
CF45	#	1-527-943-32	R412	#	6.8k : CHIP
CF60	#	1-567-100-22	R413	#	2.2k : CHIP
CF65	#	1-567-101-22	R415	#	220 : CHIP
CT45	#	1-579-690-21	R417	#	220 : CHIP
CT60	#	1-409-429-21	R418	#	680 : CHIP
CT65	#	1-409-327-21	R422	#	120 : CHIP
D401	#	MA77-TX	R423	#	150 : CHIP
D402	#	ISS119-25TD	R427	#	330 : CHIP
D1203	#	RD9.1ES-T1B	R428	#	22k : CHIP
D1209	#	RD9.1ES-T1B	R429	390 : CHIP	180 : CHIP
IC401	#	LA7910	R430	#	470 : CHIP
J1201	4P	6P	R431	#	22k : CHIP
J1202	2P	3P	R432	#	470 : CHIP
JR107	0 : CHIP	#	R435	#	470 : CHIP
JR116	#	0 : CHIP	R436	#	22k : CHIP
JR203	0 : CHIP	#	R437	#	22k : CHIP
JW252	#	7.5MM	R1204	#	47k : CHIP
L403	#	12µH	R1207	#	47k : CHIP
L404	#	8.2µH	R1213	#	1k : CHIP
L405	#	8.2µH	R1214	#	470k : CHIP
L407	#	15µH	R1222	#	1k : CHIP
L408	#	1.8µH	R1223	#	10k : CHIP
L409	#	2.2µH	R1224	#	10k : CHIP
L411	#	2.7µH	R1226	#	39k : CHIP
Q403	#	UN2216-TX	R1234	#	43k : CHIP
Q404	#	UN2216-TX	R1235	39k : CHIP	43k : CHIP
Q405	#	2SB709A	R1242	#	1k : CHIP
Q407	#	2SB709A	R1244	#	100 : CHIP
Q410	#	2SB709A	R1253	1.5k : CHIP	3k : CHIP
Q411	#	2SD601A	SWF401	1-767-663-11	1-760-771-11
Q412	#	2SD601A			

: Not Used

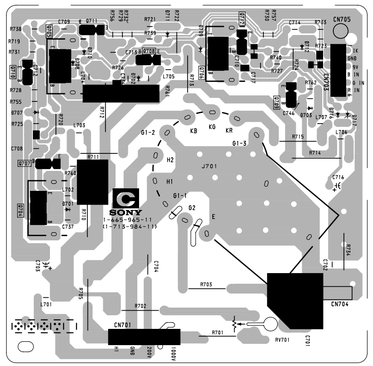
PRINTED WIRING BOARD

– C BOARD –



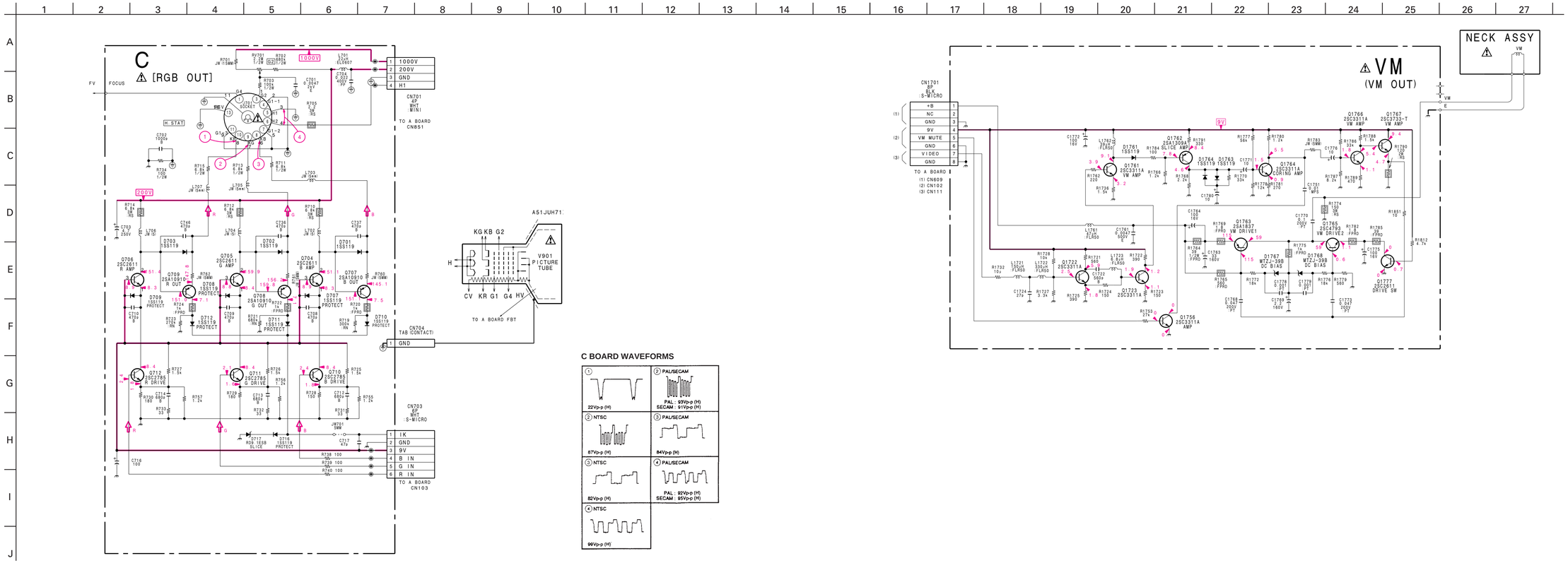
C [RGB OUT]

– VM BOARD –



VM [VM OUT]

(2) Schematic Diagrams of C and VM Boards



C BOARD WAVEFORMS

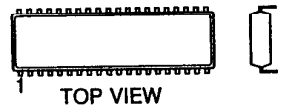
① 22Vp-p (H)
② PAL/SECAM PAL : 93Vp-p (H) SECAM : 91Vp-p (H)
③ NTSC 67Vp-p (H)
④ PAL/SECAM 84Vp-p (H)
⑤ NTSC 82Vp-p (H)
⑥ PAL/SECAM PAL : 92Vp-p (H) SECAM : 95Vp-p (H)
⑦ NTSC 99Vp-p (H)

Schematic diagram ← A board

Schematic diagrams C, VM boards →

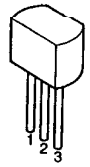
6-4. SEMICONDUCTORS

CXA1110BS (30PIN)
CXP85220A-058S (64PIN)
ST24C04CB1 (8PIN)
SAA5261 (52PIN)
TDA4665T-T (16PIN)
TDA8375A (56PIN)
TDA8395T (20PIN)

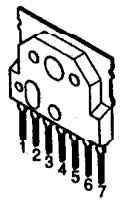


Dual In-line Package
Pin 6 ~ 98

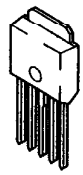
LA7910



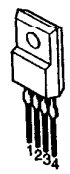
LA7830



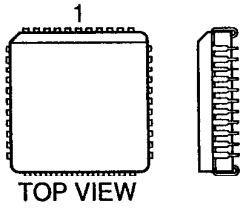
L78LR05D-MA



PQ09RE11

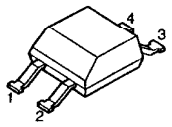


MSP3410D-PP-B3 (64PIN)

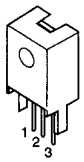


Quad Flat J-leaded Package
Pin 20 ~ 996

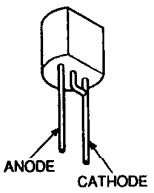
PC123F2



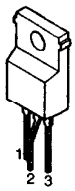
SBX1981-11



µPC574J

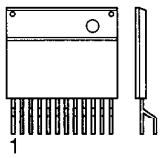


SE115N



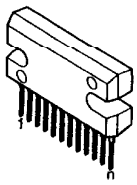
STR-S6707N (9PIN)

MARKING SIDE VIEW

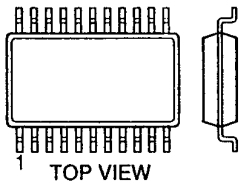


Zig-zag In -line Package
Pin 6~99

TA8246K

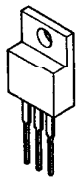


µPC4558G2 (8PIN)

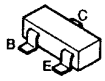


Small Outline L-leaded Package
Pin 8 ~ 98

NJM7805FA

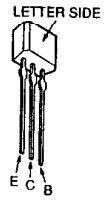


DTA114EKA-T146
DTC114EK
UN2211
UN2213
UN2216
2SA1162-G
2SC1623-L5L6
2SC2712-YG
2SD601A-Q



2SA1091-O

2SA1175-HFE
2SC2410SN
2SC2785-HFE



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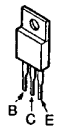
2SD2012
2SD2394-EF



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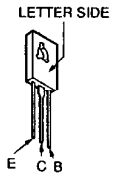

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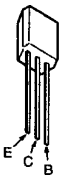

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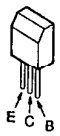

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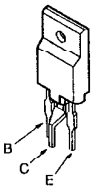

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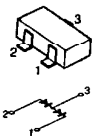

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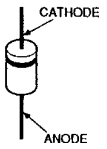
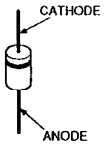
GP08D
RGP02-17EL-6433



ERC06-15S
S3L20UF4



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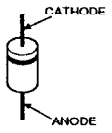
RU4DS



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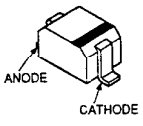
MA113-(TX)



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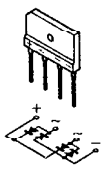
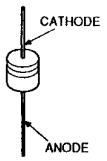
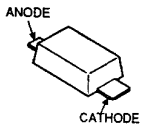


RD2.2ES-B2
RD39ES-B2
RD4.7ESB2
RD5.1ES-B1
RD5.6ESB2
RD8.2ES-B2
RD9.1ES-B3
RD9.1ES-L
1SS119-25



MA77



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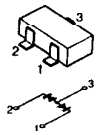
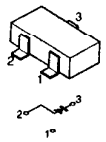


RD3.3M-B2
RD5.6M-B2



KV-J21MF2/J21MH2/J21MN21
RM-869

SECTION 7
EXPLODED VIEW

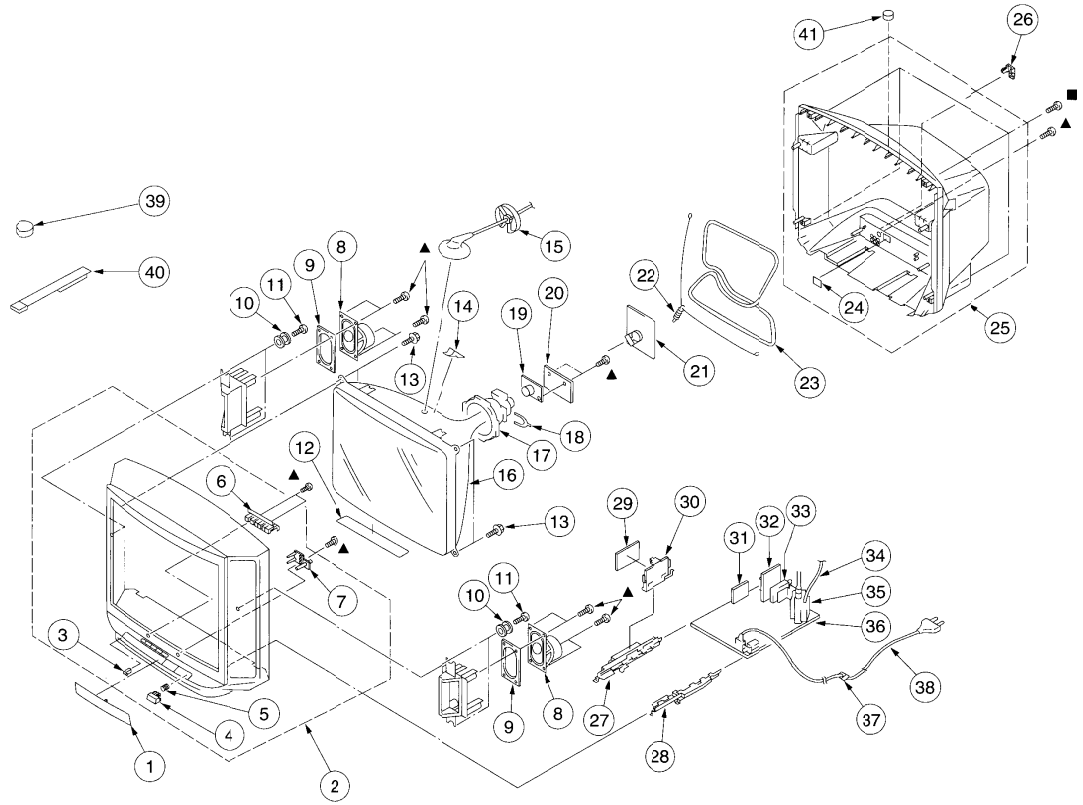
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. CHASSIS

■ : BVTP4 × 16 7-685-663-71
▲ : BVTP3 × 12 7-685-648-79



REF.NO.	PART NO.	DESCRIPTION	REMARK
1	4-062884-61	DOOR, CONTROL (KV-J21MF2)	
	4-062884-51	DOOR, CONTROL (KV-J21MH2)	
	4-062884-01	DOOR, CONTROL (KV-J21MN21)	
2	X-4045-175-1	BEZNET ASSY (KV-J21MF2)	3-7
	X-4044-815-1	BEZNET ASSY (KV-J21MH2/MN21)	3-7
3	4-047464-01	CATCHER, PUSH	
4	4-055546-21	BUTTON, POWER	
5	4-036405-11	SPRING, COMPRESSION	
6	4-060144-01	BUTTON, MULTI	
7	* 4-060143-01	GUIDE, LIGHT	
8	1-503902-11	SPEAKER (15x6.5CM)	
9	4-052433-01	CUSHION, SPEAKER	
10	4-374745-21	CUSHION (A)	
11	4-302404-03	SCREW (WASHER HEAD) (–P 4X16)	
12	4-372556-11	SHEET, BLOTTING	
13	4-057862-01	SCREW, TAPPING 5+CROWN WASHER	
14	4-046600-11	SPACER, DY	
15	* 3-704372-11	HOLDER, HV CABLE	
16	⚠ 8-738774-05	PICTURE TUBE (A51JUH71X)	
17	8-451280-33	DEFLECTION YOKE (Y21PXA2) (KV-J21MF2/MH2)	
	8-451280-81	DEFLECTION YOKE (Y21PXA2-S3) (KV-J21MN21)	
18	1-452277-00	MAGNET, BMC	
19	1-452509-51	NECK ASSY, CRT (NA308)	
20	* A-1342-363-A	VM BOARD, COMPLETE	
21	* A-1331-688-A	C BOARD, COMPLETE	
22	4-369318-61	SPRING, TENSION	
23	⚠ 1-409942-51	COIL, DEMAGNETIZATION	
24	4-049416-01	SHEET, BLIND	
25	⚠ X-4034-787-1	REAR COVER ASSY	24
26	4-049130-01	CLAMPER, CORD	
27	* 4-055548-01	GUIDE (L), PWB	
28	* 4-055549-01	GUIDE (R), PWB	
29	* A-1241-204-A	F1 BOARD, COMPLETE (KV-J21MH2 ONLY)	
30	4-049158-01	BRACKET, F1 PC BOARD (KV-J21MH2 ONLY)	
31	* A-1347-136-A	V1 BOARD, COMPLETE (KV-J21MN21 ONLY))	
32	* A-1298-264-A	A3 BOARD, COMPLETE (KV-J21MH2/MN21 ONLY)	
33	8-598323-30	TUNER, VSS BT-AG401	
34	⚠ 1-900212-58	LEAD ASSY, FOCUS	
35	⚠ 1-453250-11	TRANSFORMER ASSY, FLYEACK (NX-1746//M3A)	
36	* A-1298-351-A	A BOARD, COMPLETE (KV-J21MF2)	
	* A-1298-350-A	A BOARD, COMPLETE (KV-J21MH2)	
	* A-1298-208-A	A BOARD, COMPLETE (KV-J21MN21)	
37	⚠ 4-389778-11	HOLDER, AC CORD	
38	⚠ 1-574062-61	CORD, POWER (WITH CONNECTOR) 2.5A/250V (KV-J21MF2/MN21)	
	⚠ 1-769609-21	CORD, POWER (WITH CONNECTOR) (KV-J21MH2)	
39	1-452032-00	MAGNET,DISC	
40	4-051736-21	PIECE A(90), CONV. CORRECT	
41	4-038462-01	CAP, ANTENNA	